

Guidelines for the Preservation of High-Traffic-Volume Roadways

New guide helps engineers select lower-cost pavement preservation over high-impact reconstruction for heavily traveled roadways

Relatively small investments in preserving existing pavement can forestall the need for major reconstruction projects. Many effective pavement preservation techniques exist, but until now they have been used, especially in urban settings, primarily for low-volume roads.

A comprehensive report developed through the second Strategic Highway Research Program (SHRP2) shows that **many conventional techniques—and some new ones as well—can be used to extend the life of high-traffic-volume roads and avoid disruptive and costly major rehabilitation and reconstruction projects.** Derived from an extensive literature review and a detailed survey of transportation agencies, the report and the guide document successful current practices and provide selection matrices to help match specific high-volume-traffic situations with the best available treatments.

Preservation Approaches for High-Traffic-Volume Roadways and Guidelines for Preservation of High-Traffic-Volume Roadways

The Solution

Preservation Approaches for High-Volume-Traffic Roadways and its companion guidelines are the first systematic and comprehensive documents to provide the technical background and decision-making framework needed to bring proven preservation strategies widely into play for high-volume roads.

The guide clarifies key factors that affect preservation treatment decisions, including traffic levels, pavement conditions, climate conditions, available work hours, and treatment performance and cost. Preliminary and final feasibility matrices for hot mix asphalt and Portland Cement Concrete-surfaced pavements allow engineers to quickly zero in on a particular treatment type (such as crack fill) and see whether it is recommended for particular distress types and severity levels. Example decision matrices simplify the complex factors involved and give steps for weighing technical inputs. Appendices summarize treatments and give examples of how the matrices have guided treatment selection.

Making it easier to invest in preservation strategies for heavily traveled roads

FOCUS AREA:
Renewal (R26)

Decision matrix, treatment guide, and examples outline best practices and support the selection of the right option for your travel conditions.

Save Lives

- Shorter construction periods reduce risks and enhance safety for the traveling public and construction workers.



Save Money

- Preserving existing pavement reduces need for major reconstruction projects.
- Selecting the best preservation strategy reduces financial risk.



Save Time

- This guidance helps decision makers quickly target techniques most likely to work in a given high-volume-traffic situation.



The Benefits

By helping engineers to more quickly and confidently select the right treatment at the right time for a given pavement, the guide can help transportation agencies embrace preservation instead of rehabilitation or reconstruction, thereby saving scarce transportation dollars. And by focusing on more than 20 treatments that have proven cost-effective, these documents also help save money by reducing the risk of choosing preservation over reconstruction.

Follow-on benefits to choosing preservation over reconstruction include reducing congestion and increasing worker and driver safety. Small problems can be fixed before they become big problems, and the public can enjoy a smoother ride sooner. In the long run, selecting the right preservation techniques with help from the guide could help increase economic viability, since good roads underlie good business.



Photo Credit: Iowa DOT / HNTB

Who is using preservation techniques on high-volume roadways?

- ▶ **Georgia Department of Transportation (DOT)** has used crack seals, single-course microsurfacing, overlays, and mill/overlays on urban roadways.
- ▶ **Texas DOT** uses crack seals, polymerized chip seals, and ultrathin overlays as well as other treatments on rural roads.
- ▶ **South Dakota DOT** uses fog seal, ultrathin bonded wearing course, and cold in-place recycling on rural roads.
- ▶ 16 states are currently using this product through the FHWA/AASHTO Implementation Assistance Program (IAP). They include **Arizona, Delaware, District of Columbia, Georgia, Kentucky, Maine, Massachusetts, Minnesota, Missouri, New Jersey, Pennsylvania, Rhode Island, Tennessee, Washington, West Virginia, and Wisconsin.**

"This tool is about opportunity. This tool gives the states a portfolio of options and choices. I think it will help us redefine how we do our decision making in terms of infrastructure management."
Andrew Williams, Ohio Department of Transportation

How can you learn more?

The report and companion guide, *Preservation Approaches for High-Traffic-Volume Roadways and Guidelines for the Preservation of High-Traffic-Volume Roadways*, are available for online viewing at <http://www.trb.org/Publications/Blurbs/165280.aspx> and <http://www.trb.org/Publications/Blurbs/164965.aspx>. For helpful tools and information on this product, visit: http://shrp2.transportation.org/Pages/R26_HighTrafficVolRoadways.aspx. Updates on the SHRP2 program can be found at www.fhwa.dot.gov/GoSHRP2 or <http://SHRP2.transportation.org>. For more information, contact Thomas Van at FHWA, thomas.van@dot.gov; or Kate Kurgan at AASHTO, kkurgan@aaashto.org.



About SHRP2 Implementation

The second Strategic Highway Research Program is a national partnership of key transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners conduct research and deploy products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system.

Strategic Highway Research Program

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